

AbstractFLUID-DISPENSING AND REFILLING SYSTEM FOR
A POWER TOOTHBRUSH

The fluid delivery/refilling system includes a unit-of-use fluid reservoir for dentifrice or medication within a head portion of a power toothbrush, which is removable from the remainder thereof. A pump element is located in the brushhead and is configured so that the back and forth movement of the brushhead in operation results in fluid moving from the reservoir to a dispensing valve located in the brushhead. The dispensing valve has an end portion which is normally closed, opening under pressure of fluid from the pump. The refilling assembly is separate from the toothbrush and is configured to fit over the top of the toothbrush. Upward pressure exerted on the toothbrush when the toothbrush is within the refilling assembly results in movement of a core element in the refilling assembly, which in turn results in a hollow needle in the refilling assembly extending into a refiller valve in the head portion of the toothbrush. This results in a fluid path between the refilling assembly and the reservoir in the toothbrush. A selected sequence of movement of the toothbrush relative to the refilling results in fluid being moved from the external reservoir through the needle into the on-board unit-of-use reservoir in the toothbrush.